AIPHONE

835549 0986 E

YAZ PHONE TYPE INTERCOM

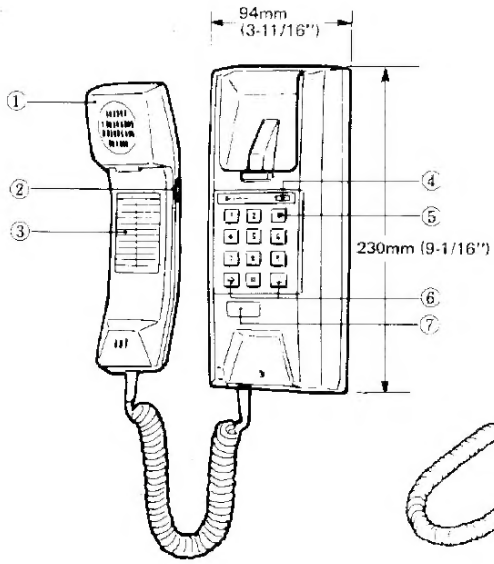
MODEL: YAZ-90-3 *(wall mount)*

— INSTRUCTIONS —

YAZ-90-3 is a microprocessor-based intercom, requiring no central exchange unit and with a maximum capability of 90 stations installed per system.

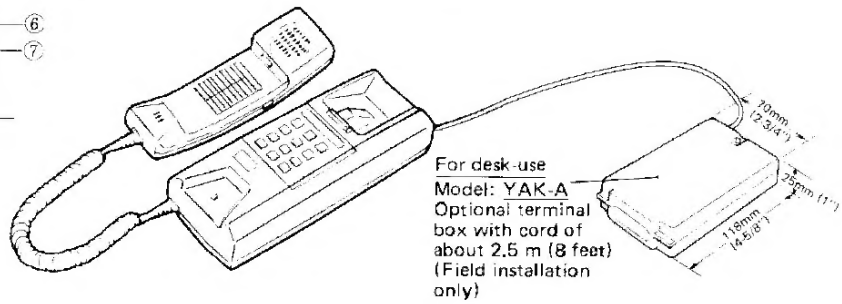
Wiring is accomplished by running 4 twisted pairs in parallel throughout the system, which facilitates ease in installation, changing location and system expansion.

Various communication functions are standard and the YAZ system is ideal for use in schools, hospitals, offices, public institutions, factories, banks etc.



NAMES & FUNCTIONS

① Handset
② Page button
③ Directory card
④ Indicator LED
⑤ Dial buttons (0 ~ 9)
⑥ Function button (⊙ , ⁙)
⑦ Station number card



SYSTEM FEATURES

* Up to 90 phone stations connected in parallel by 4 twisted pairs throughout the system.
* 3 communication channels.
* Incorrect wiring causes mulfunctions of the communication channel concerned but will not affect the remaining two communication channels.
* Complete communication privacy.
* Intercom unit designed for wall mount. YAK-A terminal box/cord is optional for desk-top use.
* Assigning station number is easily accomplished by just setting a plate on each station.
* A variety of STANDARD communication functions, such as call transfer, camp-on busy, etc. Paging and remote control operations are available with optional accessories.

BEFORE YOU INSTALL AND OPERATE THE EQUIPMENT — Prohibitions and precautions —

* Operation;
  1. **DO NOT HOLD HOOK SWITCH DOWN WHILE PICKING UP HANDSET. THE CALL TONE SOUNDS THROUGH THE HANDSET RECEIVER ELEMENT AND COULD CAUSE HEARING DAMAGE.**
* Installation;
  1. **DO NOT CONNECT ANY TERMINAL ON ANY UNIT TO AC POWER LINES.**
  2. BE SURE TO REMOVE PLUG OF POWER SUPPLY FROM AC OUTLET BEFORE YOU OPEN THE UNIT OR MAKE WIRING CONNECTIONS.
  3. Avoid running the connecting wires thorough doors, windows or between furniture, which may pinch and disconnect the wires.
  4. Installation location requirements on Page 3 must be met.
* Maintenance;
  1. Clean your intercom equipment with a soft cloth dampened with neutral household cleanser. Never use thinner nor benzine, etc.

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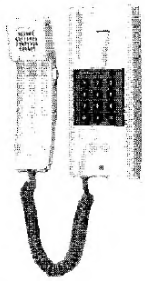
YAZ SYSTEM SPECIFICATIONS

* Power source	DC 24V. Use one PS-24N power supply for every 30 stations.
* Current consumption (per station)	Maximum 150mA. 20mA in standby mode.
* Communication	Simultaneous by handset.
* Communication channel	Maximum 3 channels.
* Station selection	2-digit dial (10 ~ 99).
* Wiring	2-twisted pairs in parallel (1 2 , + −) for 1 communication channel. 3-twisted pairs in parallel (1 2 , 3 4 , + −) for 2 communication channels. 4-twisted pairs in parallel (1 2 , 3 4 , 5 6 , + −) for 3 communication channels.
* Wiring distance	Total wiring distance should not exceed 2.9 km (1.8 mile) with 0.8 mm dia. (20AWG) cable.
* Permitted line resistance	Less than 200 ohm loop for communication line. Less than 20 ohm loop for power line.

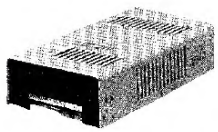
COMPONENTS AVAILABLE FOR USE WITH YOUR YAZ SYSTEM

Station unit



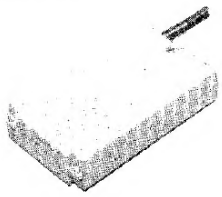
YAZ-90-3: Phone type intercom, wall mount (3 communication channels).

Power supply



PS-24N: Power supply adaptor. One PS-24N is required for every 30 stations.

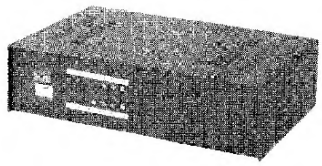
Accessory



YAK-A: Terminal box with cord and connector for desk-top use.

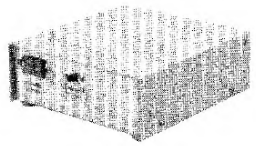
Accessories (for optional functions)

YAW-R: Paging adaptor for one zone.



YAW-RA: Paging adaptor for up to 8 zones with multiple selective zones and all page.

PB-YKX: Talkback adaptor. Required for each talkback paging zone.



YAW-S: Remote control adaptor for lighting, etc.

* For details, please refer to the Instructions packed with each unit.

PRE-INSTALLATION INSTRUCTIONS

1. Use twisted pair cable, not straight conductors.

(1) YAZ-90-3 phone employs such components as CPU (microprocessor) and IC chips. Twisted-pair cable must be used to prevent the unit from being interfered by line inductive noises generated by the surrounding electrical appliances and from crosstalk and mulfunction caused by cable conductors themselves.

(2) Keep at least 30 cm (1') away from other cable, like AC power lines or paging speaker lines or telephone lines or provide metal conduit for running cable.

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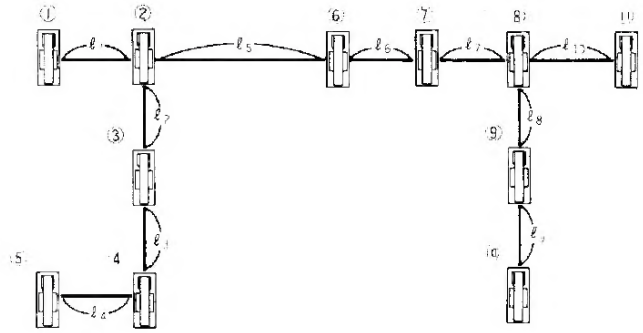
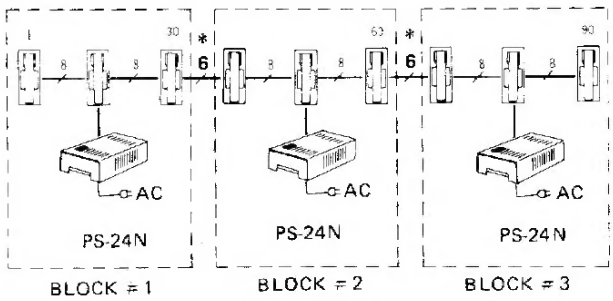
2. The total wiring distance should not exceed 2.9 km (1.8 mile) with 0.8 mm dia. (20 AWG) cable. ($\ell_1 + \ell_2 + \ell_3 + \ldots\ldots \ell_9 + \ell_{10}$ in the below illustration).



Diameter of wires	0.5 mm dia.	0.65 mm dia.	0.8 mm dia.
Distance	1,100 m	1,900 m	2,900 m
AWG	24AWG	22AWG	20AWG
Distance	0.7 mile	1.2 mile	1.8 mile

Note: The line loop resistance should not exceed 200 ohm for communication line between the farthest phones (stations ⑤ and ⑩) in the system.

3. One power supply is required for every 30 phones.



*Notes: When power supply is installed in each block: #1, 2 and 3 as shown in the left illustration, do not connect terminals [+] , [—] between each block.

The loop resistance of power supply line between PS-24 N power supply and the remotest phone in each block, should be less than 20 ohm.

No. of YAZ-90-3 used	Power supply required	Location of Power supply
Up to 30 stations	1 pce	Install PS-24N power supply in the center of each block (30 stations)
From 31 to 60 stations	2 pcs	
From 61 to 90 stations	3 pcs	

Note: When locating power supplies for each block, please count the adaptors for paging or remote operation of lights as follows;
* one YAW-R 1-zone paging adaptor as 5 YAZ-90-3 phones.
* one YAW-RA 8-zone paging adaptor as 10 YAZ-90-3 phones.
* one YAW-S remote operation adaptor as 4 YAZ-90-3 phones.

4. Installation location requirements

Do not install YAZ-90-3 phones and power supply to such places as exposed to;
1) high temperature (eg. direct sunlight, air conditioning heat, furnace, etc.)
2) low temperature (eg. refrigirated warehouse).
3) extremely high humidity.
4) water, oil, dust, chemicals, etc.
5) When the system is installed outside the building, such as ski resort and/or between buildings, etc. the cable has to be buried under ground in metal conduit. Be sure not to run the cable in the sky which invites lightning surge and causes permanent damage to the system.

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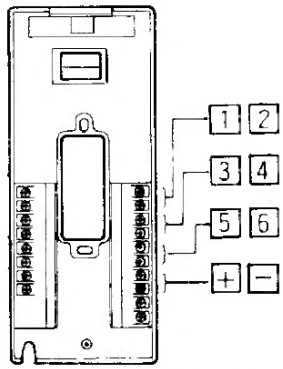
ACTUAL TERMINAL LOCATION

The connecting terminals are located inside the chassis. Two rows of the terminals are provided, one is to connect incoming wires and the other is to connect outgoing wires.

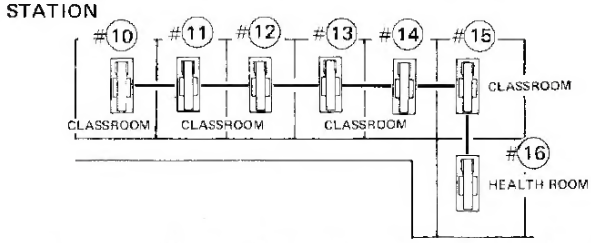


(terminals for first communication channel)
Connect to terminals 1 2 of the next station.
(terminals for second communication channel)
Connect to terminals 3 4 of the next station.
(terminals for third communication channel)
Connect to terminals 5 6 of the next station.
(power supply terminals)
Connect to terminals + − of the next station.

INSIDE VIEW OF YAZ-90-3 CHASSIS

SETTING YOUR STATION NUMBER

STEP # 1: Assign station number from 10 through 99.

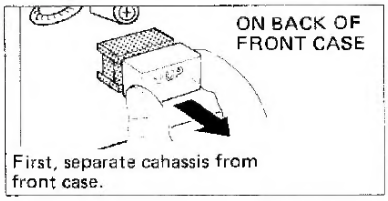


- YAZ-90-3 system does not require central exchange unit and, therefore, assigning station number must be done on each station.
- The YAZ-90-3 station may have any number from 10 through 99 according to the users' convenience.

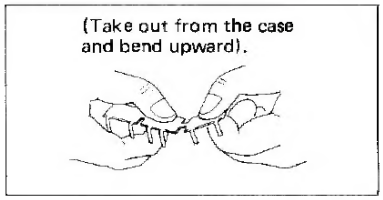
- Be sure to assign a station number of every station installed otherwise that station would not be able to receive calls.
- Do not assign the same number to more than one station.
- Alphabets A to F on the plates should remain unused.
- In case two plates touch each other, cut off the remaining end.

STEP # 2: Attach the No. -setting plate (provided in the case) to the socket on back of each unit.

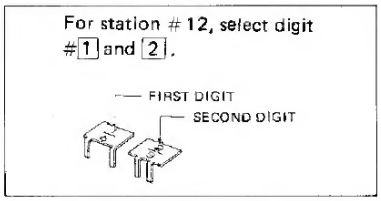
① Remove cover of the socket.



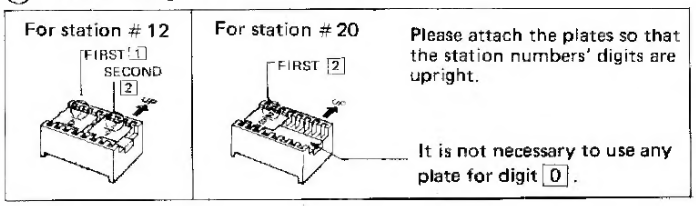
② Separate the plates.



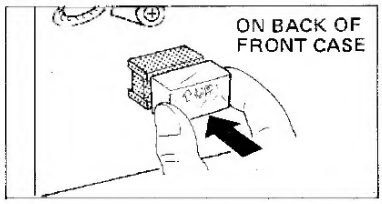
③ Select 2 plates for each phone station.



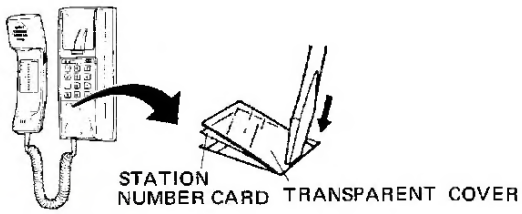
④ Attach the plate to the socket.


For station # 12
FIRST 1
SECOND 2
For station # 20
FIRST 2
Please attach the plates so that the station numbers' digits are upright.
It is not necessary to use any plate for digit 0.

⑤ Replace the cover.



STATION NUMBER CARD



- Using the minus-head screwdriver, push either end of the transparent cover.
- Fill in your station number programmed on the card.

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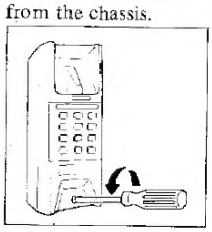
MOUNTING INSTALLATION

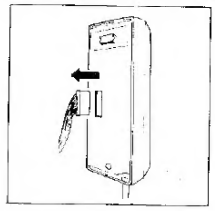
* Wall-mounting;

YAZ-90-3 unit is designed for wall-mounting and the terminal section is located on the chassis. Be sure to run cable through the conduit or in the wall and mount the YAZ-90-3 unit onto the one-gang electrical box.

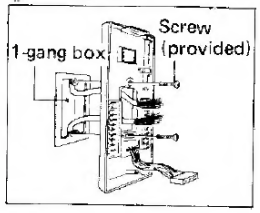
① Remove a screw and separate the front case from the chassis.



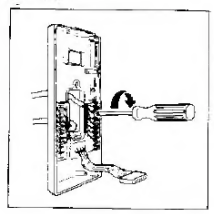
② Remove connector from the receptacle on back of the front case.



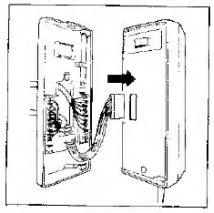
③ Attach the chassis onto the one-gang electrical box.



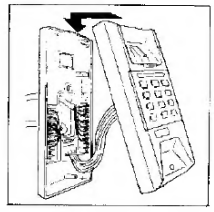
④ Connect wires to the terminals on back of the chassis.



⑤ Attach connector to the receptacle again.



⑥ Hook the front case to the chassis at its top.



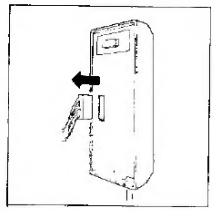
⑦ Attach the front case to the chassis.

YAK-A TERMINAL BOX INSTALLATION

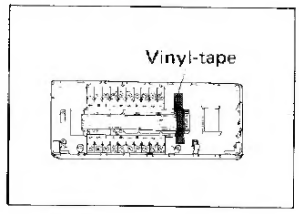
When you wish to use a YAZ-90-3 phone station on your desk, please use terminal box complete with cord and connector, Model: YAK-A, which must be ordered separately.

① Remove a screw.

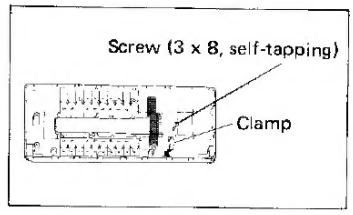
② Remove a connector.



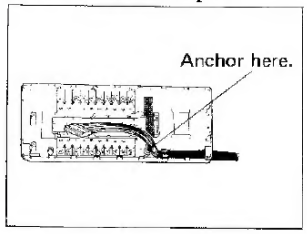
③ Fix the connector on the chassis by tape, etc.



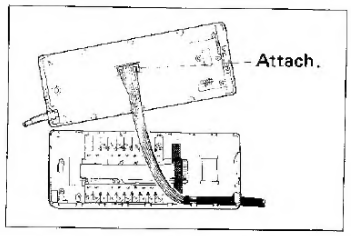
④ Remove a screw (3 x 8mm), self-tapping) fixing the clamp.



⑤ Pass the YAK-A's connector through either top or bottom hole and anchor the cable by the screw removed in Step 4.

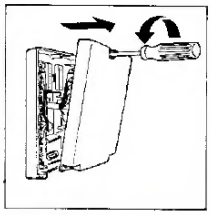


⑥ Attach the connector to the receptacle.

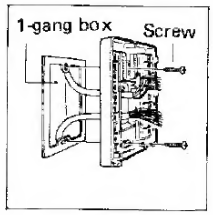


* Wall mounting installation;

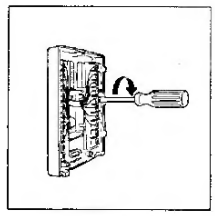
① Remove a screw and separate cover.



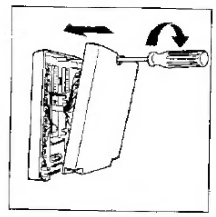
② Attach the terminal case to 1-gang box or wall with the supplied screws.



③ Connect wires.



④ Replace the cover. Be careful not to pinch wires between connectors.



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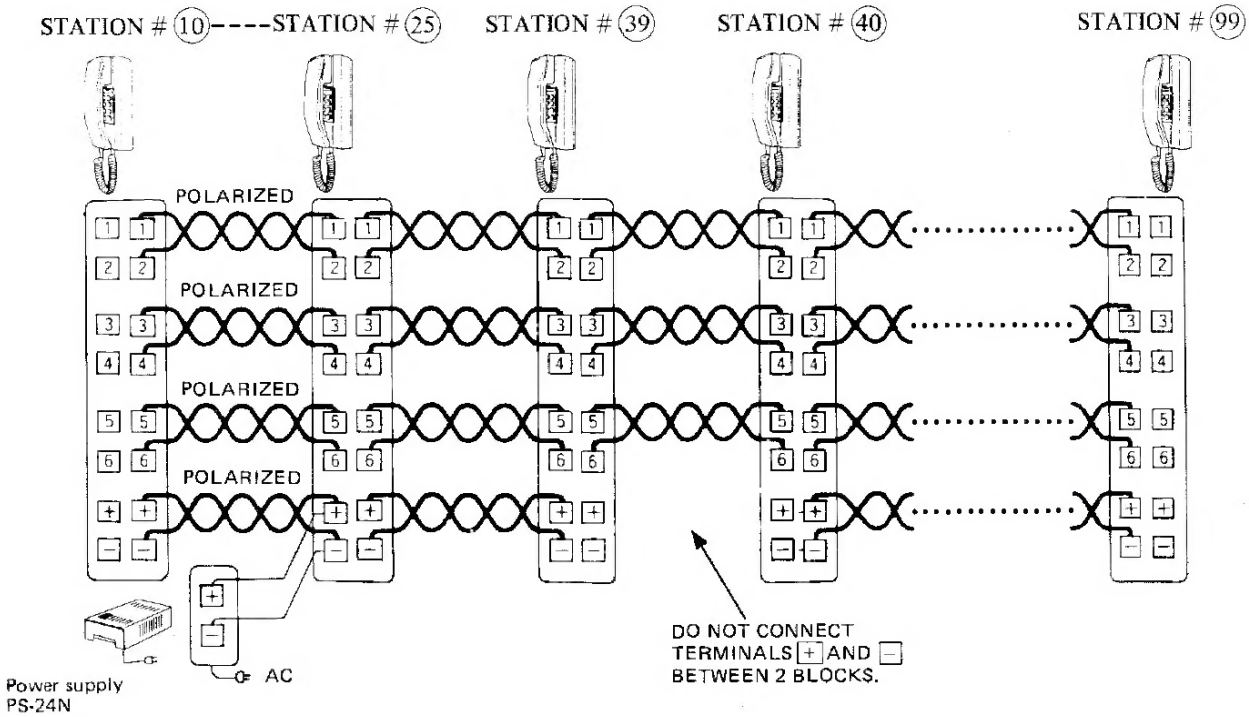
WIRING DIAGRAM



* YAZ-90-3 is a parallel-wiring system, requiring only 4 twisted-pairs of conductors throughout the system.
Terminals Nos. 1 and 2 for first communication channel.
Terminals Nos. 3 and 4 for second communication channel.
Terminals Nos. 5 and 6 for third communication channel.
Terminals Nos. + and − for power supply.

IMPORTANT WIRING INSTRUCTIONS

(1) WIRING;

* Use twisted pair cable.

* Connect first twisted pair to terminals 1 2 , second twisted pair to terminals 3 4 , third twisted pair to 5 6 and forth twisted pair to + − . Do not cross wires.

* Even if you have extra wires, do not use them for communication line (Do not connect two or more wires to each number terminal).

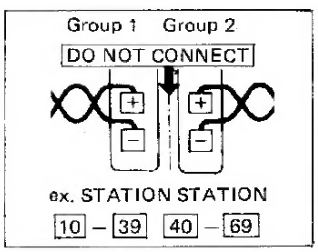
(2) PS-24N POWER SUPPLY CONNECTION

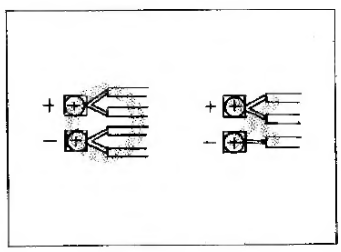
* One PS-24N power supply is required for every 30 stations.

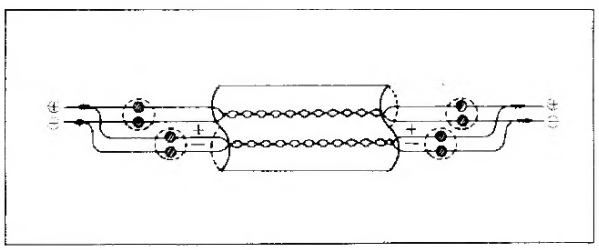
* Each PS-24N power supply must be located near the center of each 30 station group.

* + and − lines must not be installed between 30 station groups, i.e. If the system includes 60 stations the first PS-24N should be connected to station No. 25 and the second PS-24N to station No. 55. Do not connect terminals + and − between stations Nos. 39 and 40.

* If you have extra wires, it may be used for wiring to + − lines (never for communication lines). It is important, however, the line resistance on + − lines is equal. See drawing below.







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SELF-CHECK OPERATION

1. Pick up handset and dial tone is heard.
2. Press number buttons [0], [1], [3], [7] and [9], which sets your station in self-check mode.
   Busy tone means your operation is void. Try again.
3. Depress and hold down either number button [1], [2] or [3] corresponding to communication channel desired to check.
   * A continuous tone means your station is operative.
   * An intermittent tone means your station is defective.

OPERATIONS

1. CALLING & COMMUNICATION

CALLING

OPERATION	MODE OF THE CALLED STATION	ACTION
1. Pick up handset. 2. Press two dial buttons of desired station (i.e. [1] [0] for station # 10). 3. To call by voice, depress page button in handset. 4. After communication, hang up handset.	▬ ▬ ▬ Tremolo tone	➡ Talk as on the telephone after the called station replies.
	The station is communicating with other station. ▬▬▬▬▬ Busy tone	➡ Hang up handset and call later. ➡ OR Press [⊙] button for setting camp-on busy and hang up handset (Indicator LED flashes upon hanging up handset).

RECEIVING

Incoming call is announced by either tremolo tone or by voice. To reply, simply pick up handset.

2. CALL TRANSFER

When you transfer your call with one station to another,

1. Press [⁙] button and the station number to which you are transferring the call.
   When the station replies, hang up handset.

OR

2. Press [⊙] button and the station number. Intermittent tone means the transfer is completed and you may hang up handset.

3. COMMUNICATION AMONG 3 STATIONS

When you wish to have the third station join the conversation being held, press [⁙] button and the third station number (If your call to a third station is not picked up in 15 seconds, it will automatically return to the initial communication between the first two stations).

4. SECRETARY TRANSFER (STATION TRANSFER)

When you wish any of incoming calls to be received by your secretary or other designated station,

1. Pick up handset.
2. Press [⊙] button and the two dial buttons of secretary station.
3. Hang up handset.
4. Indicator LED on your station starts to flash when you hang up handset.

* To clear Secretary (Station) Transfer mode;
  Press [⊙] and [0] buttons at your station.

5. PAGING WITH YAW-R

1. Pick up handset.
2. Press [⁙] button.
3. Press a dial button (0 – 9) of YAW-R number assigned (No.)
4. Page while depressing page button in handset.
5. Release page button in handset to listen, when talkback is included.
6. Hang up handset.

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6. PAGING WITH YAW-RA

1. Pick up handset.
2. Press [*] button.
3. Press a dial button (0 – 9) of YAW-RA number assigned (No.).
4. For all page; Press [⊙] button.
   For zone page; Press a dial button ([1]~[8]) of zone desired.
   For multiple zone page; Press in succession dial buttons of zones desired.
   Note: If wrong zone numbers were selected, press [*] button. All the previously selected zones are cancelled.
5. Page while depressing page button in handset.
6. Release page button in handset to listen, when talkback is included.
7. Hang up handset.
   Note: Talkback is not available in all page mode.

7. REMOTE OPERATION OF CONTROLLING ON/OFF OF LIGHTS OR DOOR RELEASE, ETC. WITH YAW-S

1. Pick up handset.
2. Press [*] button.
3. Press a dial button (0 – 9) of YAW-S number assigned (No.).
4. Press either dial button or page button in handset.
   An intermittent tone indicates the lighting function is in ON mode.
   A continuous tone indicates the lighting function is in OFF mode.
5. • Alternate operation; Momentarily press [⊙] button to turn on lights OR
   Momentarily press [*] button to turn off lights.
   • Momentary operation; Press and hold [⊙] button down to activate door release, etc.
6. Hang up handset.

FCC APPROVED IN THE UNITED STATES:

WARNING. – This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for **A Class A Computing Device Pursuant to Subpart J of Part 15 of FCC Rules**, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

We at AIPHONE are proud of our products. Our designers and engineers strive to bring you the finest in communication equipment. Each item has been carefully tested and inspected before leaving our factory. Properly installed and used, your Aiphone intercom system should give years of trouble free service.

We are pleased to offer the following warranty:

WARRANTY

Aiphone warrants its products to be free from defects of material and workmanship under normal use and service for a period of one year after delivery to the ultimate user and will repair free of charge or replace at no charge, should it become defective upon which examination shall disclose to be defective and under warranty. Aiphone reserves unto itself the sole right to make the final decision whether there is a defect in materials and/or workmanship; and whether or not the product is within the warranty.

This warranty shall not apply to any Aiphone product which has been subject to misuse, neglect, accident, or to use in violation of instructions furnished, nor extended to units which have been repaired or altered outside of the factory.

This warranty does not cover batteries or damage caused by batteries used in connection with the product.

This warranty covers bench repairs only, and any repairs must be made at the shop or place designated in writing by Aiphone. Aiphone will not be responsible for any costs incurred involving on site service calls.

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Aiphone Corporation, Bellevue, Washington
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